

Notice of Allowability

Application No.

10/712,712

Examiner

Alexander G. Ghysa

Applicant(s)

SATO ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to ____.2. ☒ The allowed claim(s) is/are 3-5, 8-14, 21 and 22.3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).a) ☒ All b) ☐ Some* c) ☐ None of the:1. ☒ Certified copies of the priority documents have been received.2. ☐ Certified copies of the priority documents have been received in Application No. ____.3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.ALEXANDER GHYKA
PRIMARY EXAMINERAv 2812
Attachment(s)1. ☐ Notice of References Cited (PTO-892)2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date ____4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material5. ☐ Notice of Informal Patent Application (PTO-152)6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____7. ☐ Examiner's Amendment/Comment8. ☒ Examiner's Statement of Reasons for Allowance9. ☐ Other ____.

DETAILED ACTION

Allowable Subject Matter

Claims 3-5, 8-14 and 21-22 are allowed.

The following is an examiner's statement of reasons for allowance: The closest prior art known to the Examiner is listed on the PTO 892 and IDS forms of record. None of the references or combinations thereof anticipate or make obvious, *inter alia* moving randomly the intensity distribution of the laser beam on the semiconductor film in the periodic direction of the intensity modulation wherein a coordinate y on the semiconductor film in the periodic direction of the intensity modulation at the point wherein the laser beam intensity becomes a maximum at the time of said laser beam exposure is given by $y = na + r$ as required by Claim 3 and 9; moving randomly the intensity distribution of the laser beam on the semiconductor film in the periodic direction of the intensity modulation, melting by exposure of the laser beam, an area smaller than a crystal grain on the crystallized semiconductor film obtained by exposure of said laser beam on said semiconductor film to divide the semiconductor film; and promoting crystallization around the cores of plural crystal grains thus divided to reconstruct a single crystal grain as required by Claim 4, 10 and 20-21; moving randomly the intensity distribution of the laser beam on the semiconductor film in the periodic direction of the intensity modulation, and forming in the periodic direction of the intensity modulation of said laser beam, the polycrystalline semiconductor film having a grain size approximately equivalent to a periodicity of said intensity modulation as required by Claims 5 and 11; moving said laser beam in relation to the dielectric

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substrate in the short axis direction of the laser beam to the semiconductor film for exposing the semiconductor film a plurality of times to crystallize the semiconductor film, moving randomly the intensity modulation of the laser beam on the semiconductor film formed on the dielectric substrate from one laser beam exposure position to another laser beam exposure in the long axis direction, and using a phase shift mask having a periodicity of the periodicity of said intensity modulation times an integer more than two to maintain a constant distance between said semiconductor film and said phase shift mask to provide periodic intensity of the laser beam as required by Claim 8; and exposing a semiconductor film on a dielectric substrate of an active matrix to a pulsed laser beam having intensity modulated at first periodicity, and exposing said semiconductor film to a second modulated pulsed laser beam having a periodicity smaller than the first periodicity as require by Claims 12-14. Therefore the present Claims are allowable over the cited prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander G. Ghyka whose telephone number is (571)

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272-1669. The examiner can normally be reached on Monday through Thursday during general business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AGG
November 8, 2005

ALEXANDER GHYKA
PRIMARY EXAMINER

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